Technical Bulletin STB007

Pressure Testing of Stream33 PEX A Piping Systems

Product: **Stream33 PEX-A Plumbing Pipe**
Date: **14 August 2023**

Stream33 only provides the general guidelines for performing a pressure test on a Stream33 PEX A piping system as set forth below. This guideline applies to both compressed air and hydrostatic (water) testing for the following applications:

- Potable hot and cold plumbing
- Radiant floor heating (RFH) and cooling
- Snow and ice melting (SIM)
- Ground source heat exchange (geothermal)
- General hydronic distribution

⚠ WARNING

- Failure to follow proper safety precautions for an air pressure test could result in dangerous separation of the material, leading to serious injury or death.
- Use personal protective equipment. To reduce the risk of eye injury, always wear close-fitting protective eyewear with side protection. Eyewear must be impact-rated and marked as complying with ANSI Z87.1.
- Never use a torch, open flame or heat gun on a pressurized system. Exceeding the temperature pressure ratings will result in dangerous separation of materials leading to serious injury or death.
- Never rework a connection that is under pressure. Depressurize the system, cut out connection and replace.
- To reduce the risk of personal injury, only qualified persons conducting and/or inspecting the pressure test should be present.

General Recommendations

- A pressure test must always be performed prior to closing in the system (e.g., behind drywall).
- Perform test using water or air at ambient temperature. **Do not exceed 150 PSI (1030 kPa) for the piping system**. Verify maximum pressure limits are not exceeded for all system components prior to performing the pressure test.
- For RFH and SIM systems, a pressure test must always be performed on the system prior to and during the installation of the thermal mass to ensure that Stream33 Pipe and connections are leak free. For dry systems (e.g., joist space), a pressure test must be performed after installation and up to the time that the system is put in operation.
- Tests shall comply with local codes where applicable and, where required, shall be witnessed by the building official.

Pressure Testing with Air

Air can store a high amount of energy as compared to water during a pressure test. Due to this higher energy, different failure modes of system materials must be understood by persons conducting the pressure test.

- If a thermoset polymer (e.g., PEX A pipe) is over-pressurized and fails (bursts), it does so in a ductile mode, meaning that the pipe will swell and then split with no separation of fragments.
- If a rigid thermoplastic polymer material (e.g., PPSU) is over-pressurized and fails (bursts), it does so in a brittle mode and can result in separation of the material.